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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,096	10/05/2004	Kia Silverbrook	YUI85NPUS	5054
24011 7590 05/13/2008 SILVERBROOK RESEARCH PTY LTD 393 DARLING STREET BALMAIN, 2041 AUSTRALIA				
EXAMINER				
SOLOMON, LISA				
ART UNIT		PAPER NUMBER		
2861				
MAIL DATE		DELIVERY MODE		
05/13/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/510,096

**Applicant(s)**

SILVERBROOK ET AL.

**Examiner**

LISA M. SOLOMON

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 February 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
4a) Of the above claim(s) 7-9 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-6 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 05 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date 2/12/2008  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Allowable Subject Matter***

1. The indicated allowability of claims 1-6 is withdrawn in view of the newly discovered reference(s) to Inui et al. (5,719,604) and Furlani et al. (6,588,884).

Rejections based on the newly cited reference(s) follow.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Inui et al. (5,719,604).

In re claim 1, *Inui et al. (604')* teaches a thermoelastic actuator (See Fig. 4) including: a heating element (6, Fig. 3) including a heating layer (6) bonded to a passive bend layer (2, Fig. 3) [Column 5 lines 32-40]; a heat conduction means (2) positioned within said passive bend layer (2) to conduct heat generated by the heating element (6) away from said actuator assembly thereby facilitating the return of the actuator to a quiescent state subsequent to operation [Column 5 lines 32-35, Column 6 lines 16-39, Column 7 lines 10-13].

Note: The passive bend layer/buckling body (2) acts also acts as a heat conduction means. The material for the passive bend layer/buckling body can be

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nickel, chromium, cobalt, copper, and alloys. It is inherent that metals are good heat conductors.

In re claim 2, *Inui et al.* (604') teaches a thermoelastic actuator according to claim 1, wherein the heat conduction means (2) comprises one or more layers of a metallic heat conductive material located within the passive bend layer (2) [Column 7 lines 10-13].

In re claim 4, *Inui et al.* (604') teaches a thermoelastic actuator according to claim 2, wherein the one or more layers of metallic heat conductive material comprise a laminate of heat conductive material and passive bend layer (2) substrate [Column 7 lines 10-13].

In re claim 6, *Inui et al.* (604') teaches an inkjet printer including a thermoelastic actuator according to claim 2 [Column 1 lines 7-10].

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Furlani et al. (6,588,884).

In re claim 1, *Furlani et al.* (884') teaches a thermoelastic actuator assembly (see Fig. 12 (b)) including: a heating element (20, Fig. 12(b)) including a heating layer (33, Fig. 12 (b)) bonded to a passive bend layer (22, 24, Fig. 12(b)) [Column 5 line 63-Column 6 line 6; 40-48, Column 9 lines 25-32]; a heat conduction means (23, Fig. 12(b))

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positioned within said passive bend layer (22, 24) to conduct heat generated by the heating element (20) away from said actuator assembly thereby facilitating the return of the actuator to a quiescent state subsequent to operation [Column 6 lines 10-39].

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 and 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inui et al. (5,719,604).

In re claim 3, *Inui et al. (604')* teaches a thermoelastic actuator according to claim 2 [see rejection above], wherein the one or more layers of metallic heat conductive material (2) is sufficient to prevent overheating of ink in contact with said actuator [Column 6 lines 34-40].

Note: Although Inui et al. (604') is silent in its teaching of the sufficiency of the metallic heat conductive material of the heat conduction means/buckling body (2), Inui et al. (604') teaches that the heat conduction means/buckling body (2) is metal and that the heat conduction means/buckling body (2) radiates heat to the substrate or away from the actuator assembly. Thus, it would be obvious that if the metal material of the heat conduction means/buckling body (2) conducts heat to the substrate or away from the actuator assembly that it is sufficient to prevent overheating of the ink in contact with the actuator.

In re claim 5, *Inui et al. (604')* teaches the claimed invention except wherein the one or more layers of metallic heat conductive material comprise Aluminum. It would be obvious to one of ordinary skill in the art to use Aluminum as the heat conductive material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use for the purpose of allowing the passive bend layer/buckling body (2) to radiate heat away from the actuator assembly [*Inui et al. (604')* Column 6 lines 34-40]. In re Leshin, 125, USPQ 416.

#### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LISA M. SOLOMON whose telephone number is (571)272-1701. The examiner can normally be reached on Monday - Friday from 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LUU MATTHEW/  
Supervisory Patent Examiner, Art Unit 2861

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